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ABSTRACT

An attempt was made to address the normative issues involved in using the Kuder Career Search with a Northern Plains Indian population. Normative data was collected on the Kuder Career Search for American Indians from 76 American Indians from the Northern Plains region, ranging in age from 14 to 51. The instrument considers the moderating variables, including acculturation and gender, and an initial consideration of concurrent validity. Within this sample, there were only minor differences in Kuder Activity Preference Scale scores based on acculturation or gender. Men scored higher on Mechanical activities and women scored higher on Office Detail activities, supporting earlier literature on gender differences. Level of acculturation was also related to differences in Mechanics scale. An initial inquiry into concurrent validity suggests only minimal support for the Career Clusters' ability to identify participants' self-described occupational interests. Follow-up tests of concurrent validity are warranted, as are continued assessments of the normative properties of this measure for ethnic minority populations. (Contains 4 tables and 12 references.) (Author/JDM)

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Developing American Indian Norms for the Kuder Career Search

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Abstract

This manuscript represents an initial attempt to address the normative issues involved in using the Kuder Career Search with a Northern Plains American Indian population. The study included three components: a report of the normative data collected on the Kuder Career Search for American Indians; an analysis of moderating variables, including acculturation (as measured by the Northern Plains Bicultural Index) and gender; and an initial consideration of concurrent validity. Within this sample, there were only a few minor differences in Kuder Activity Preference Scale scores based on acculturation or gender. Supporting earlier literature on gender differences, men scored higher on Mechanical activities and women scored higher on Office Detail activities. These differences were also reflected in the Kuder Career Clusters, where women had a lower score on the Mechanical Career Cluster, and men's least-preferred Career Cluster was Business Detail. Level of acculturation was also related to differences in the Mechanics scale, with individuals in the Marginalized category scoring highest on that scale and individuals with a European American identification scoring lowest. An initial inquiry into concurrent validity suggests only minimal support for the Career Clusters' ability to identify participants' self-described occupational interests. Follow-up tests of concurrent validity are warranted, as are continued assessments of the normative properties of the Kuder Career Search for ethnic minority populations.

Developing American Indian Norms for the Kuder Career Search

American Indian populations are significantly under-represented in the vocational psychology literature. A review of 68 empirical multicultural career development articles in three vocational journals revealed that only two included American Indians in the populations studied (Koegel, Donin, Ponterotto, & Spitz, 1995). However, a small number of empirical studies have considered American Indian responses to vocational assessment instruments.

There is some evidence that the interest structure of American Indian populations is consistent with Holland's 6-point hexagon (Holland, 1959). Recently, a number of studies have included American Indians when considering the structure of vocational interests among ethnic and racial minorities (Day, Rounds & Swaney, 1998; Day & Rounds, 2000; Hansen, Scullard & Haviland, 2000). The authors of two studies that included several ethnic groups (Day, Rounds & Swaney, 1998; Day & Rounds, 2000), concluded that the Holland RIASEC interest structure is an appropriate model of interests for American Indian, as well as other ethnic minority, populations. In a study of American Indian college students, Hansen, Scullard and Haviland (2000) also concluded that the RIASEC interest structure was appropriate, although it may be a better fit for women than for men. These authors also noted that "the level at which individuals identify with traditional and modern Native American culture may affect their view of the world of work (p. 169)" and suggest that future research consider the role of acculturation.

In other studies of American Indian response to interest inventories, the Occupational Scale scores of the Strong Vocational Interest Blank – Strong Campbell Interest Inventory corresponded with the declared college major of American Indian students (Haviland & Hansen, 1987). Lattimore and Borgen (1999) found that the overall General Occupational Theme scores of the Strong Interest Inventory effectively predicted occupational membership for American

Indians, although interests in the Enterprising theme were minimized. American Indians have been found to differ from the norms on the Self-Directed Search (Gade, Fuqua, & Hurlburt, 1984; Krebs, Hurlburt, & Schwartz, 1988), and the Kuder-E (Epperson & Hammond, 1981). Specifically, Epperson and Hammond (1981) suggested that local norms should be used when interpreting the Kuder-E for American Indians.

Various versions of Kuder career interest inventories have a long and respected use in career counseling and guidance. The Kuder Career Search (National Career Assessment Services, Inc., 1999) is a newly revised Kuder career interest inventory, used to assist individuals with their career decision-making process. However, nothing is yet known about the normative psychometric properties of the Kuder Career Search for use with American Indian populations.

The purpose of this study is to provide information about American Indian scores and distributions on the Kuder Career Search scales. Additionally, the relationship between levels of acculturation and Kuder Career Search scales is considered, as is the match between self-identified career interests and Kuder Career Cluster rankings. The goal of this project is to provide a context for interpreting the results of the Kuder Career Search with a sample of Northern Plains American Indians.

Method

Participants

Participants included 76 American Indians from the Northern Plains region, ranging in age from 14 to 51 years (see Table 1). The mean age was 22.7 years (SD = 8.61), with 17 adolescents (ages 14 – 17) and 59 adults (ages 18 – 51). The mean time living on the reservation was 15.7 years (SD = 9.74) and living off the reservation was 7.0 years (SD = 9.42). Seventy-five percent of the participants (n=57) were female and 25% (n=19) were male. The majority of

Table 1. Description of participants: Gender, education and tribal affiliation.

	n	Percent
Gender		
Female	57	75
Male	19	25
Education		
Junior High	6	7.9
High School	46	60.5
Trade/Technical Degree	1	1.3
Associate Degree	19	25
Bachelor's Degree	3	3.9
Graduate Degree	1	1.3
Tribal Affiliation		
Chippewa	31	40.8
Sioux	28	36.8
Three Affiliated Tribes (Mandan, Hidatsa, Arikara)	9	11.8
Blackfeet	1	1.3
Chippewa/Sioux/Cherokee	1	1.3
Creek/Yuchi	1	1.3
Navajo	1	1.3
Three Affiliated Tribes/Cheyenne	1	1.3

participants were from Chippewa (40.8%, n=31), Sioux (36.8%, n=28), and Three Affiliated Tribes (9.2%, n=7). In addition, other participants represented the Arikara, Blackfeet, Mandan, Navajo, and mixed tribes of Chippewa/Sioux/Cherokee, Creek/Yuchi, and Three Affiliated Tribes/Cheyenne. Three participants did not indicate a tribal affiliation.

Most of the participants had completed high school (92%; n=70) and an additional 30.2% (n=23) had obtained an associate degree. The majority of their education took place in predominantly American Indian schools (10.1 years) compared to predominantly non-Indian schools (6.2 years). More had attended career fairs (44.7%; n=34), followed by career guidance (31.6%, n=24) and completing career assessments (31.6%; n=24) as their primary career development activities. Career counseling (27.6%; 21), internet career exploration (23.7%; 18), and other methods of career exploration (15.8%; n=12) were also indicated.

Instruments

Kuder Career Search. The Kuder Career Search is most useful as a career exploration tool, providing individuals with scores on Activity Preferences Scales and Career Clusters (described in Table 2). The Activity Preference Scales organize preferences into ten career-related categories, including Art, Computations, Nature, Office Detail, Communications, Music, Sales/Management, Mechanical, Science/Technical, and Human Services. Activity Preference Scale scores are reported as percentiles, based on a combined norm group of males and females. The Activity Preferences are then combined in a rank-order set of Career Clusters, presented as ordinal data with no additional descriptive information. The Career Clusters include Outdoor and Mechanical, Science and Technical, Arts and Communication, Social and Personal Services, Sales and Management, and Business Detail (Olson, 1999). Individual scores are compared to a

criterion sample of males and females currently employed in various occupations (Zytowski, 1999).

In addition, the individual report includes Person Matches and Job Sketches, in which the survey-taker can see how people with interest profiles similar to their own are working in a variety of occupations and subsequently learn more information about the nature of those occupations. Validity and reliability information is being gathered for the Kuder Career Search at the present time.

Northern Plains Biculturalism Inventory (NPBI). The NPBI (Allen & French, 1994) is a 30-item measure of identification with Northern Plains American Indian and European-American culture. Both college and community (non-college) versions are available. The NPBI includes three scales: American Indian Cultural Identification (AICI), European American Cultural Identification (EACI) and Language. The AICI and EACI scales have an orthogonal relationship, resulting in the assignment of one of four possible identification categories: bicultural, American Indian identification, European American identification, and marginality. The Language scale (not used in the present study) taps a single bipolar construct, looking at preference and use of American Indian or European American language at either end of the spectrum.

Test-retest reliability (after 6 months) range from .82 for the AICI scale to .70 for the EACI scale. In the initial norm sample, the mean score on the AICI was 39.51 (SD = 10.13), on the EACI was 35.75 (SD = 8.33), and on Language was 9.78 (SD = 4.70). Allen and French (1994) recommend using local norms and analyzing the NPBI scores using a median split procedure. In the present sample, the AICI mean score was 45.6 (SD = 6.4), the EACI mean score was 36.1 (SD = 9.9) and the Language score was 12.5 (SD = 3.8).

Procedures

After providing informed consent, participants were administered the on-line Kuder Career Search in an individual or group setting. When finished, participants completed the demographic information and NPBI surveys, while the administrator downloaded their individual Kuder report. When the participant had completed all of the forms, the administrator provided interpretive feedback on the Kuder results, using guidelines suggested by Zytowski (1999). Participants were given the opportunity to ask any questions they had, and were given a copy of their report, as well as instructions to access their report via the web for additional exploration, before they left the session.

Design

Activities Preference Scales. In addition to reports of means and standard deviations of American Indians from the Northern Plains Region on the ten Activities Preference Scales, multivariate analyses were also conducted to determine if differences existed based on the categories of acculturation (American Indian, European American, Bicultural, and Marginalized) and gender for these same scales.

Career Clusters. Frequency distributions of the rank order of the six Career Clusters for the 76 participants were described. Chi square analyses were conducted to identify any differences within the distribution based on acculturation or gender.

Table 2. The Kuder Career Search Activity Preference Scales and Career Clusters.

Activity Preference Scales	
Nature	Outdoor activities, such as caring for plants or animals.
Mechanical	Activities related to know how things work and using tools and machines to make or repair things.
Science/Technical	Activities such as discovering or understanding the natural and physical world.
Art	Creative activities related to making beauty.
Music	Activities that involve listening to or making music, singing, playing an instrument, or leading a musical group.
Communications	Activities using language, either written or oral.
Human Services	Activities that help other people.
Sales/Management	Activities that deal with people, such as leading a team or selling things or ideas.
Computations	Activities that use numbers.
Office Detail	Activities that require keeping track of things, people, or information.
Career Clusters	
Outdoor & Mechanical	Careers involving hands-on knowledge of tools and machines.
Science & Technical	Careers that involve work with abstract ideas, observing, understanding and discovering things.
Art & Communications	Careers that involve creativity and originality, including communication skills.
Social & Personal Services	Careers that involve helping, service, and protective services, involving a sensitivity to the needs of others.
Sales & Management	Careers that are people-oriented and involve persuading other people to do something.
Business Detail	Careers that are data-oriented, involving routine and clear standards of performance.

Results

Preliminary Analyses. A one-sample chi-square test was conducted to assess whether men or women were more likely to fall into different levels of acculturation (American Indian, European American, Bicultural, and Marginalized). The results of the test were not significant, X^2 (4, N = 76) = 2.28, p = .69.

Activities Preference Scales. Table 3 presents the means and standard deviations of the scores for the ten Activities Preference Scales. Of note is the relatively high mean for the Human Services Scale (M = 12.97, SD= 3.79), and the relatively low mean for the Music Scale (M = 4.84, SD= 2.32). A 4 x 2 MANOVA was conducted to determine the effect of acculturation (American Indian, European American, Bicultural, and Marginalized) and gender on the 10 Activities preference Scales. No significant differences were found among the ten Activities Preference Scales, Wilks' Λ= .759, F (40) = 1.36, p = .09.

Although there was no overall significant difference, several post hoc analyses were conducted as it was hypothesized the acculturation (as a main effect) and gender (as a main effect) would have a significant impact on the Activities Preference Scales, especially those scales related to the Enterprising Holland Code (see Epperson, 1981). However, neither of the one-way MANOVA results for either gender or acculturation were significant, Wilks' Λ= .76, F (10 ,40) = 1.81, p = .08 and Wilks' Λ= .442, F (40, 218) = 1.30, p = .12, respectively. Indeed, the only significant simple main effects for gender were for the Office and Mechanical Scales of the Activities Preference Scale, F (1) = 7.72, p = .007 and F (1) = 5.25, p = .03, respectively, and the Mechanical Scale for acculturation, F (4) = 3.86, p = .007. Follow-up tests indicated that women had higher Office Scale scores than men, and men had higher Mechanical Scale scores than women. In regards to acculturation, the individuals in the Marginalized category of

Table 3. Means, Standard Deviations, and Univariate Significance of Kuder Activities Preference Scales by Gender, Acculturation, and Total Score.

Scale	M	SD	F	df	*p*
Music (Total)	4.84	2.32			
Acculturation			.56	4	.71
Marginalized	4.24	2.02			
Bicultural	5.67	1.37			
American Indian	5.22	2.33			
European American	4.67	2.73			
Gender			2.21	1	.13
Female	4.65	2.45			
Male	5.42	1.77			
Nature (Total)	9.07	2.91			
Acculturation			.47	4	.76
Marginalized	9.12	3.14			
Bicultural	8.50	2.88			
American Indian	8.78	2.86			
European American	8.33	1.37			
Gender			.71	1	.40
Female	9.25	2.87			
Male	8.53	3.04			
Science (Total)	11.79	3.74			
Acculturation			.75	4	.56
Marginalized	11.00	4.34			
Bicultural	12.00	2.73			
American Indian	12.00	3.74			
European American	12.33	3.27			
Gender			2.12	1	.15
Female	11.70	3.63			
Male	12.05	4.17			
Communication (Total)	8.46	3.33			
Acculturation			.95	4	.44
Marginalized	8.82	3.21			
Bicultural	7.92	2.91			
American Indian	8.11	1.69			
European American	11.17	1.17			
Gender			.02	1	.89
Female	8.37	3.29			
Male	8.74	3.51			

Scale	M	SD	F	df	*p*
Office (Total)	10.09	3.27			
Acculturation			1.27	4	.29
Marginalized	10.41	3.34			
Bicultural	9.33	2.31			
American Indian	9.67	2.92			
European American	11.17	4.58			
Gender			7.72	1	.01*
Female	10.42	3.20			
Male	9.11	3.38			
Human Service (Total)	12.97	3.79			
Acculturation			.83	4	.51
Marginalized	12.06	4.66			
Bicultural	13.92	3.96			
American Indian	13.22	3.04			
European American	11.67	4.08			
Gender			.882	1	.35
Female	13.32	3.70			
Male	11.95	3.98			
Computation (Total)	7.16	2.67			
Acculturation			.89	4	.48
Marginalized	7.29	2.69			
Bicultural	6.42	2.54			
American Indian	5.44	1.67			
European American	7.83	2.93			
Gender			.03	1	.89
Female	7.21	2.67			
Male	7.00	2.73			
Mechanical (Total)	7.59	2.98			
Acculturation			3.86	4	.01*
Marginalized	9.06	2.82			
Bicultural	7.25	3.19			
American Indian	6.33	3.16			
European American	5.33	1.97			
Gender			5.25	1	.03*
Female	6.95	2.57			
Male	9.53	3.34			

Scale	M	SD	F	df	*p*
Art (Total)	6.42	2.91			
Acculturation			1.77	4	.15
Marginalized	7.12	2.29			
Bicultural	6.92	3.06			
American Indian	6.44	3.78			
European American	7.00	4.05			
Gender			.206	1	.65
Female	6.46	2.93			
Male	6.32	2.94			
Sales (Total)	8.01	3.32			
Acculturation			1.573	4	.19
Marginalized	9.35	3.04			
Bicultural	6.17	2.69			
American Indian	8.89	2.03			
European American	6.83	3.66			
Gender			.39	1	.54
Female	7.81	312			
Male	8.63	3.90			

note: * $p < .05$

acculturation had the highest scores on the Mechanical scale and those in the European American category had the lowest scores (see Table 3).

Career Clusters. Twelve two-way contingency table analyses were conducted to evaluate whether level of acculturation (American Indian, European American, Bicultural, and Marginalized) and gender influenced rankings of the six Kuder Clusters. Gender, Acculturation, and Kuder Clusters were not found to be significantly related (see Table 4). Only the analysis of gender and participants last preference (i.e., least preferred) of Career Clusters was significant, X^2 (5, N = 76) = 21.83, p = .01.

Table 4. Results of Pearson Chi Square Analyses for the Impact of Gender and Acculturation on Participants' Rank Ordering of Six Kuder Career Clusters.

Comparison	N	X^2	df	*p*-value
Gender				
By 1st Choice	76	9.81	5	.08
By 2nd Choice	76	4.73	5	.45
By 3rd Choice	76	6.64	5	.25
By 4th Choice	76	5.20	5	.40
By 5th Choice	76	3.62	5	.61
By 6th Choice	76	21.9	5	.001*
Acculturation				
By 1st Choice	76	19.46	20	.49
By 2nd Choice	76	10.88	20	.95
By 3rd Choice	76	22.31	20	.33
By 4th Choice	76	23.17	20	.28
By 5th Choice	76	18.98	20	.52
By 6th Choice	76	13.05	20	.88

note:*$p < .05$

Concurrent Validity and Career Clusters. In order to provide an initial evaluation of the concurrent validity of Career Clusters for Northern Plain's American Indians, a "hit ratio" to determine the number of cases in which the participants top Career Clusters matched their self-described occupational interests. Of the 70 cases available for analyses (six participants did not indicate their current career interests), 20 (29%) had a match between stated career interest and

their highest rated Career Cluster. When looking at the match between the participant's stated career interest and their first AND second choice of Career Clusters, 27 (39%) cases were identified as matches. Among the Career Clusters, Human and Social Services (n = 28) and Science/Technical (n = 15) were most frequently the highest rated Career Clusters. Similarly, participants self-identified Science/Technical (n = 27) and Human and Social Services (n = 25) as their self-described occupational interests. However, there may be some discrepancy in the ranking of Art. Specifically, the Kuder Career Clusters identified Art as a primary choice for 13 (17.1%) participants, whereas only 5 (6.6%) participants identified Art as their self-described occupational interest.

When considering only adult participants (those 18 and older), 17 of 54 (31%) cases had a match between the stated career interest and their highest rated Career Cluster. Twenty-three out of 54 (43%) cases had this same match when looking at career interests and the participant's first AND second choice of Career Clusters.

Discussion

The results of this study included three components: a report of the normative data collected on the Kuder Career Search for American Indians; an analysis of moderating variables, including acculturation and gender; and an initial consideration of concurrent validity.

Within this sample, Human and Social Services was the highest of the Activity Preference Scales, and Music had the lowest mean scores of these scales. There were only a few minor differences in Activity Preference Scale scores based on acculturation or gender. Supporting earlier literature on gender differences, men scored higher on Mechanical activities and women scored higher on Office Detail activities. Level of acculturation was also related to differences in the Mechanics scale, with individuals in the Marginalized category scoring highest

on that scale and individuals with a European American identification scoring lowest. Although only representing one scale within the Activity Preferences, this finding supports the suggestion made by Hansen et al (2000) that future career assessment research attend to acculturation.

The next step in understanding the usefulness of the Kuder Activity Preference Scales is comparing the norms within this sample to the national norms being gathered by National Career Assessment Services, Inc. NCASI is currently revising the Activity Preference Scale structure, and so direct comparisons with this sample are not yet possible, but will be forthcoming.

The six Career Clusters did not appear to be affected by acculturation. Gender had an effect in only one instance, that of the 6th (or least similar) Career Cluster. The women's least-preferred choice was Mechanical and the men's least-preferred choice was Business Detail. Finally, initial inquiry into concurrent validity suggests only minimal support for the Career Clusters' ability to identify participants' self-described occupational interests. Follow-up tests of concurrent validity are warranted, perhaps using other interest assessment devices to compare the utility of the Kuder Career Search for an American Indian sample.

Conclusion

This manuscript represents an initial attempt to address the normative issues involved in using the Kuder Career Search with a Northern Plains American Indian population. There are many directions that can be pursued to better understand these issues. Important follow-up research will include looking at differences between adults and adolescents, more fully considering the role and appropriate measure of acculturation, analyzing participant reactions to the Kuder Career Search, and addressing tribal differences.

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